Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of   )
)
A National Broadband Plan for our Future   )   GN Docket No. 09-51

Reply Comments Filed by

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1. The FCC has been tasked with developing a National Broadband Plan by February 17, 2010, and has requested input. Most of the comments filed to date deal with a myriad of technology issues rather than approaching the creation of this plan based on the economic constraints that must be overcome in order to provide broadband to as much of the U.S. population as is practical.

2. The goal of providing broadband services to essentially all of the nation's population who want broadband access is a noble goal and one that can be accomplished fairly quickly and economically. However, it is important to understand that we already have, or will soon have, the technologies in place to deploy broadband beyond its current reach. In actuality, there are two separate issues facing the FCC in completing this report and both are based on economics—not technology.
    a. The first issue is how to build out new broadband coverage where there is none today because companies building these systems cannot earn a return on their investments.
    b. The second issue is how to support citizens in the urban/suburban areas of the nation that already have a choice of 3-8 broadband service providers but who cannot afford or justify the expense.

3. Therefore, in its report, the FCC should address these two different situations and provide economic solutions to both of them. The solutions will, of course be different. Once the plan is reduced to one of economics instead of one of technology, the options for various solutions will present themselves. This plan should not be a one-size-fits-all plan nor should it try to establish how many competitors should be permitted to compete for business in specific geographic areas. Once the economic issues have been resolved, the number of providers will be determined by market forces and how well each company manages its costs.

4. There is no rationale for moving forward with a separate, nationwide network in today's environment. Most of the urban population has access to DSL, cable, perhaps FIOS, and from four to six wireless broadband service providers as well as Wi-Fi, and now White Space unlicensed spectrum. Most of these areas will see fourth-generation technology built out over the next few years, not only by the existing wireless network operators, but also by Clearwire and a number of cable companies. These same companies are also committed to expanding their networks, where economically feasible, to cover more pops with wireless broadband than ever before.

5. It should be noted that with the possible exception of the Sprint PCS network, the other three nationwide wireless network operators did not start out with nationwide network deployments, rather they built their networks over the years by merging and acquiring other network operators. There is enough competition in most of the populated areas of the United States today to provide broadband services at economical prices. The issue in these areas is not that broadband services are not available, but the fact that some of our population does not want broadband connectivity and others simply cannot afford it.
    a. The way to provide broadband in the more populated areas is to find ways to make these services available to people who cannot afford them. This is not simply a

matter of supplying broadband, this portion of the population needs access devices as well.

b. This is an area where focus should be changed from providing broadband to providing services that make use of broadband[1]. Working with various community organizations, educational facilities, the medical industry, and device manufacturers will result in a higher uptake of broadband services in the more populated areas of the United States

6. In areas of the nation where there is no access to broadband today, or only a single broadband provider, a number of solutions can be explored. These solutions include partnering, again, with educational and medical communities, power utilities, wired and cable providers, wireless network operators and the broadband satellite industry.

a. Once again, there is no one solution for areas of less dense population. The way to provide broadband connectivity is to first partner with the various organizations and groups mentioned above, then undertake an assessment of existing infrastructure in each area and develop a plan that takes this infrastructure into account in providing services that are less expensive to build out and maintain. One resource available in 47 of the 50 states are the rural power companies that have been providing electricity to the rural areas of the United States for many years. They own right-of-ways, high-tension towers that could be used for cell sites, and they already have service vehicles to take care of the power needs of the residents they serve. I am NOT advocating Broadband over Power Lines (BPL), which has proven to be a failure. I AM advocating the use of these resources. Power companies (many of them co-ops and represented by a national organization) have the desire and need to use broadband connections for their own systems and the planned smart grid, and would like the ability to sell or resell broadband services to customers they already serve. An example of how well this works is the early deployment of DirecTV in these rural areas. For the most part, these systems were sold and installed by power companies and small rural wired and wireless operators. As a result, a very large portion of the rural population has access to affordable, high-definition TV services today.

7. Because broadband services connect to the Internet and are IP-based, from a technology point of view, it does not make a difference if solutions for deployment are different in different areas of the nation. Once the connectivity is in place, regardless of the technology, customers can access the Internet and services. There is no need for the system to be one seamless, nationwide network to accomplish the goal of providing broadband services for all who live and work in the United States.

8. For all of the reasons discussed above, I believe that the FCC's Broadband Plan should not focus on technologies—wired, cable, fiber, and wireless—but rather on the economic models needed to drive the adoption of broadband services. Today we have many different technologies capable of delivering a broadband experience, and in the future these technologies will be enhanced, data speeds will be increased, and new technologies will

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[1] Andrew Seybold: Broadband for All Americans, http://www.andrewseybold.com/downloads/WPBroadband12-22-08edt.pdf

emerge. The FCC should not limit the future of broadband by stipulating broadband speeds, capacities, or costs, in the same way that the FCC has not dictated specific wireless technologies for specific portions of the spectrum. Market forces will drive these decisions and the research needed to continue to advance the state-of-the-art. Attempting to predict or shape what lies ahead will only serve to hinder technological developments. Therefore, it would be in the best interests of the U.S. population to focus on ways in which more people can become connected, more people can access faster connections and greater capacity, and how we enable those who do not have the financial resources to take advantage of the technologies and systems that are and will be in place to provide these services.

9. It would be easy to become bogged down in the early planning stages by trying to define exactly what broadband service is; what data speeds and what capacity meet the definition of broadband.
    a. Today, broadband services, both wired and wireless, run the gamut from a low of roughly 256 Kbps to higher than 50 Mbps, and the technology already exists to increase the high-end of this speed curve. Of course, it also must be decided if to qualify as a broadband service both the up and down links need to be symmetrical in nature or if slower speeds from a customer's device back to the network are permissible and, if so, what the difference should be.
    b. Capacity on a per-customer basis is even more difficult to define and plan for. Most of today's systems make use of shared bandwidth, so both the speed and the customer's ability to access higher amounts of data may be affected by the network load.
    c. There are two schools of thought regarding the capacity of today's wired Internet. According to many reports[2], we are already at a point where 40% of today's traffic is made up of video, and Internet infrastructure providers will not be able to keep up with the increased demand over the course of the next five years[3]. The issue of shared bandwidth is exacerbated when the system is wireless. There are more variables that impact data speeds and capacity for wireless networks, including the amount of spectrum available per cell sector, or site, the technology deployed, the capacity of the backhaul system, and the capacity of the network itself. It is, therefore, important to factor all of these variables into the plan for our future broadband needs. However, there are those, including Google[4], that dismiss limited wireless bandwidth as being irrelevant. Their rationale is that we will simply build more wireless nodes and take wireless from the last mile to the last 500 feet, to the last 200 feet to the last foot. However, that does not take into consideration the fact that wireless IS the last mile or foot and that it takes a wired infrastructure to connect the wireless nodes to the Internet. With data speeds increasing over the next few years, traditional backhaul wired systems will not be able to provide the data capacity that is needed. We will need to build fiber and microwave systems in order to provide the backhaul that will be needed for future broadband deployments.

[2] http://www.internettrafficreport.com/

[3] http://search.techrepublic.com.com/search/internet+data+traffic.html

[4] http://www.chetansharma.com/blog/2007/11/21/pbs-commentary-on-the-smartphone-market/

10. Today, 92% of the U.S. population has at least one provider of broadband service, and 96% of the total population has wired and/or wireless voice access. While there may be some technical impediments preventing further development of broadband services in rural areas, many of these issues will be solved within the next few years with the advancement of both wired and wireless technologies. Further, it is not, in my opinion, practical to choose a single method of providing broadband services to the nation's population. Rather, it will be both more cost effective and more timely if several thrusts are put forward in the report.

11. The first of these would be to narrow the gap between the 92% of the population that already has at least one broadband provider and the additional 4% that do not have access to broadband services but do have access to wired and/or wireless voice services.

12. Next would be to develop economic models to encourage additional providers to build out service areas where the competition is limited to one or only a few service providers.

13. These objectives could best be achieved by completing an inventory of services that are already available, determining how they could be extended to cover more of the population, and what would be required to ensure additional competition in the marketplace.

14. There is a tendency in today's government to believe that more is better, in this case, the more networks providing services, the more competition and, therefore, the cheaper the prices the citizens. In the United States, we already enjoy some of the lowest costs for broadband services in the world. Adding more competitors might cause a slight drop in the price of service for a short period of time, but in the long run, adding competitors will drive many companies out of business, leaving their subscribers stranded with no access or having to scramble to find a new company for their access. Market forces will dictate how many broadband providers can survive.
    a. For example, in the San Francisco, Oakland, San Jose, CA area, there are approximately 3.5 million people. Today these 3.5 million people have access to at least eight broadband service providers and within the next five years another four or five providers will be offering service in the same area. It is not possible, even with transient traffic, for this area to sustain ten to twelve broadband suppliers. What is the correct number? The answer will only be known after several company failures and a series of mergers and acquisitions. In the meantime, the citizens have to sort out their choices and make the best decision they can, based on the marketing skills of the various providers.

15. A final point needs to be made here. Providing a plan for nationwide broadband must include ways to continue to provide for additional capacities in both the wired and wireless worlds. Today the demand for content on the Internet is growing faster than the infrastructure needed to service that demand. There is little incentive for wired service providers to build new infrastructure today and this issue needs to be addressed. This nation cannot afford to run out of bandwidth, and based on data I have seen, we are in a position where this could happen by 2012[5] .

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[5] http://www.searchviews.com/index.php/archives/2007/02/google-warns-about-internet-overload.php

Conclusions

Because the FCC is responsible for regulating the public side of our wired and wireless services, the focus of this plan could be technology enhancements or requirements deemed necessary to provide for nationwide broadband services. It is my belief that the technology is available today and will be enhanced, and that new technologies will be introduced in the future to provide for a number of broadband options. I would respectfully ask the Commission to concentrate on the economic issues rather than the technologies. No matter how much technology we have, we will not be able to accomplish our goal of broadband for all Americans unless we find a way to provide services for all and at the same time enable those who invest in the networks to earn a return on their investment.

Respectively submitted,

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